AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the present application.

IN THE CLAIMS:

1. (Currently Amended) A method for typing HLA class I alleles comprising the steps of:

(a) providing nucleotide sequence(s) encoding HLA class I alleles or a fragment thereof as a template for PCR;

(b) non-selectively amplifying all HLA-A alleles, all HLA-B alleles, or all HLA-C alleles by PCR using a primer pair which can amplify all the HLA-A alleles, all the HLA-B alleles, or all the HLA-C alleles, or selectively amplifying a specific group of HLA-A alleles or a specific group of HLA-B alleles by PCR using a primer pair which is specific to a common nucleotide sequence of the specific group;

(c) adding the resulting PCR products to wells of microtiter plates, wherein each well is modified with a carboxyl group to covalently immobilize amino-modified DNA probes which can specifically hybridize with the sequence of at least one specific HLA-A allele, at least one specific HLA-B allele or at least one specific HLA-C allele;

(d) hybridizing the amplified products with the immobilized DNA probes at 32 to 42°C, wherein the DNA probes are selected depending on the above amplified specific HLA class I gene or

group;

(e) detecting hybridization of the amplified products with the immobilized DNA probes to produce a signal pattern;

(f) generating a Typing Table using signal patterns obtained by hybridizing the PCR amplified products from samples whose HLA class I antigen types or allele types are known with DNA probes which can specifically hybridize with the sequence of at least one specific HLA class I allele; and

(g) ~~(f)~~ determining the type of the HLA class I allele based on the signal pattern detected at ~~the~~ step (e) according to the Typing Table.

2. (Previously Presented) The method according to claim 1, wherein at least one primer of the primer pair is labeled.

3. (Currently Amended) The method according to claim 2, wherein hybridization of the amplified products with the immobilized DNA probes is determined by the steps of:

(i) adding an enzyme-conjugate which specifically binds ~~bonds~~ to the label of the amplified products thereto at the same time as or after the hybridization, and

(ii) adding a chromogenic substrate, a luminescent substrate or a fluorescent substrate to the mixture,

so as to detect as signals whether or not the amplified products are hybridized with the immobilized DNA probes.

4. (Previously Presented) The method according to claim 3, wherein at least one primer of the primer pair is biotinylated and the enzyme-conjugate is an enzyme-conjugated streptavidin.

5. (Previously Presented) The method according to any one of claims 1 to 4, wherein hybridization is performed in the presence of formamide.

6. (Previously Presented) The method according to claim 5, wherein hybridization occurs at a reaction temperature of about 37^{0}C.

7. (Previously Presented) The method according to claim 5, wherein the temperature for washing after hybridization of the amplified products by the PCR method with the immobilized DNA probes and/or after the binding reaction of the label of the amplified products with the enzyme-conjugate is room temperature.

8. (Currently Amended) The method for typing of the HLA class I alleles claimed in claim 1, wherein the amino-modified DNA probe which can specifically hybridize with at least one specific HLA-A allele, at least one specific HLA-B allele or at least one specific HLA-C allele, is ~~selected from the group consisting of A98T (SEQ ID No.:1), A98A (SEQ ID No.:2),~~ A160A

(SEQ ID No.:3), A239A (SEQ ID No.:4),A238A (SEQ ID No.:5), A240T (SEQ ID No.:6), A257TC (SEQ ID No.:7), A259AC (SEQ ID No.:8), A270T (SEQ ID No.:9), A282C (SEQ ID No.:10), A290T (SEQ ID No.:11), A299T (SEQ ID No.:12), A302G (SEQ ID No.:13), A355G (SEQ ID No.:14), A362TA (SEQ ID No.:15), A362TT (SEQ ID No.:16), A368A (SEQ ID No.:17), A368G (SEQ ID No.:18), A368T (SEQ ID No.:19), A402G (SEQ ID No.:20), A423T (SEQ ID No.:21), A448C (SEQ ID No.:22), A485A (SEQ ID No.:23), A524G (SEQ ID No.:24), A526T (SEQ ID No.:25), A527A (SEQ ID No.:26), A538CG (SEQ ID No.:27), A539A (SEQ ID No.:28), A539T (SEQ ID No.:29), A555T (SEQ ID No.:30), A559G (SEQ ID No.:31), A570CG (SEQ ID No.:32), A570GT (SEQ ID No.:33), A779A (SEQ ID No.:34), A843A (SEQ ID No.:35), BL1 (SEQ ID No.:36), BL3 (SEQ ID No.:37), BL4 (SEQ ID No.:38), BL5 (SEQ ID No.:39), BL9 (SEQ ID No.:40), BL10 (SEQ ID No.:41), BL11 (SEQ ID No.:42), BL24 (SEQ ID No.:43), BL25 (SEQ ID No.:44), BL34 (SEQ ID No.:45), BL35 (SEQ ID No.:46), BL36 (SEQ ID No.:47), BL37 (SEQ ID No.:48), BL38 (SEQ ID No.:49), BL39 (SEQ ID No.:50), BL40 (SEQ ID No.:51), BL41 (SEQ ID No.:52), BL42 (SEQ ID No.:53), BL56 (SEQ ID No.:54), BL57 (SEQ ID No.:55), BL78 (SEQ ID No.:56), BL79 (SEQ ID No.:57), BL222A (SEQ ID No.:58), BL272GA (SEQ ID No.:59), BL226G (SEQ ID No.:60), BL292G (SEQ ID No.:61), BL292T (SEQ ID No.:62), BL361G (SEQ ID No.:63), BL409T (SEQ ID No.:64), BL512T (SEQ ID No.:65), BL538CG (SEQ ID No.:66), BL538G (SEQ ID No.:67), CC (SEQ ID No.:68), A-12 (SEQ ID No.:69), A-2 (SEQ ID No.:70), A-3 (SEQ ID No.:71), A-4 (SEQ ID No.:72), A-54 (SEQ ID No.:73), B-1 (SEQ

~~ID No.:74), B-2 (SEQ ID No.:75), C-12 (SEQ ID No.:76), C-24 (SEQ ID No.:77), C-33 (SEQ ID No.:78), C-43 (SEQ ID No.:79), 134-g (SEQ ID No.:80), 134-A2 (SEQ ID No.:81), 353TCA1 (SEQ ID No.:82), 343A (SEQ ID No.:83), A34 (SEQ ID No.:100), A282CT (SEQ ID No.:101), A290TR (SEQ ID No.:102), A302GR (SEQ ID No.:103), A414A (SEQ ID No.:104), A468T (SEQ ID No.:105), A489A (SEQ ID No.:106), A502C (SEQ ID No.:107), A538TG (SEQ ID No.:108), BL39R (SEQ ID No.:109), BL50 (SEQ ID No.:110), BL77 (SEQ ID No.:111), BL272A (SEQ ID No.:112), BL263T (SEQ ID No.:113), BL527A (SEQ ID No.:114), BL570GT (SEQ ID No.:115), RA-2 (SEQ ID No.:116), RA-41 (SEQ ID No.:117), RB-28 (SEQ ID No.:118), 201g1 (SEQ ID No.:119), C206gR (SEQ ID No.:120), R341A (SEQ ID No.:121), R343g3 (SEQ ID No.:122), 353TCC (SEQ ID No.:123), 361T1 (SEQ ID No.:124), 361T368g (SEQ ID No.:125), 361T368T1 (SEQ ID No.:126), 369C (SEQ ID No.:127), 387g1 (SEQ ID No.:128), 526AC2 (SEQ ID No.:129), 538gAC (SEQ ID No.:130),~~ or a complementary strand ~~strands~~ thereof, or a ~~and~~ nucleic acid ~~acids~~ which comprises one to several bases ~~are~~ deleted from or added to the end of said nucleic acid ~~them~~.

Claims 9-25. (Canceled).

26. (Currently Amended) A method for typing HLA class I alleles comprising the steps of:

(a) providing nucleotide sequence(s) encoding HLA class I alleles or a fragment thereof as a template for PCR;

(b) non-selectively amplifying all HLA-A alleles, all HLA-B alleles, or all HLA-C alleles by PCR using a primer pair which can amplify all the HLA-A alleles, all the HLA-B alleles, or all the HLA-C alleles, or selectively amplifying a specific group of HLA-A alleles or a specific group of HLA-B alleles by PCR using a primer pair which is specific to a common nucleotide sequence of the specific group;

(c) adding the resulting PCR products to wells of microtiter plates, which are immobilized DNA probes which can specifically hybridize with the sequence of at least one specific HLA-A allele, at least one specific HLA-B allele or at least one specific HLA-C allele;

(d) hybridizing the amplified products with the immobilized DNA probes at 32 to 42°C, wherein the DNA probes are selected depending on the above amplified specific HLA class I gene or group;

(e) detecting hybridization of the amplified products with the immobilized DNA probes to produce a signal pattern; and

(f) determining the type of the HLA class I allele based on the signal pattern detected at ~~the~~ step (e) according to the Typing Table.

27. (Previously Presented) The method according to any one of claims 1 to 4, wherein hybridization occurs at a reaction temperature of about 37°C.

28. (Previously Presented) The method according to any one of claims 1 to 4, wherein the temperature for washing after hybridization of the amplified products by the PCR method with the immobilized DNA probes and/or after the binding reaction of the label of the amplified products with the enzyme-conjugate is room temperature.

29. (New) The method according to claim 5, wherein the concentration of formamide is from 5 to 30%.